

What is claimed is:

1. A method for manufacturing a crankshaft supporter having a bearing section to hold a bearing for supporting a crankshaft, said bearing section being cast in aluminum alloy and having a preform cast inside, comprising steps of:

providing a core pin;

providing a preform having a pin hole therein to accommodate said core pin;

providing said core pin with (1) a pin insert section having an outer diameter less than an inner diameter of said pin hole and (2) a head section having an outer diameter greater than said inner diameter of said pin hole;

fixing said preform in a mold with said pin insert section inserted into said pin hole and said head section in contact engagement between an outer surface of said preform and a surface of said mold;

casting said bearing section around said preform and said head section of said core pin; and

forming a through hole in the bearing section which penetrates the preform along the pin hole.

2. The method for manufacturing the crankshaft supporter as defined in Claim 1, wherein said core pin includes said head section having said outer diameter less than an inner diameter of said through hole.

3. The method for manufacturing the crankshaft supporter as defined in Claim 1, wherein a pair of said bore pins are opposingly inserted into said pin hole from opposite ends thereof;

4. The method for manufacturing the crankshaft supporter as defined in Claim 1, including providing the opposed contacting surfaces on the mold and head section with an interfitting protrusion and recess to positionally restrain the preform relative to the mold.

5. The method for manufacturing the crankshaft supporter as defined in Claim 1, including providing the pin insert section of the core pin with outwardly protruding ribs at least in the vicinity of said head section so that said ribs contact an inner surface of the pin hole to prevent sideward displacement of the core pin relative to the preform when the pin insert section is inserted into the pin hole.

6. The method for manufacturing the crankshaft supporter as defined in Claim 1, including providing the preform with a center portion having a concave recess formed therein for accommodating a crankshaft bearing, providing the preform with a pair of side sections disposed on opposite sides of the center section with each said side section having a said pin hole extending therethrough, and inserting a pair of said core pins into each said pin hole from opposite ends thereof for positionally supporting the preform within a mold cavity defined by the mold.

7. The method for manufacturing the crankshaft supporter as defined in Claim 6, including constructing the preform of alumina fiber which is penetrated by the aluminum alloy during casting.

8. The method of manufacturing the crankshaft supporter as defined in Claim 1, including forming the

through hole by cutting a hole of diameter greater than the outer diameter of the core pin head section through the bearing section in alignment with the pin hole so as to effect removal of the entirety of the core pin.

9. A method for manufacturing a crankshaft supporter which attaches to a cylinder head of a vehicle engine to rotatably support a crankshaft therebetween, comprising the steps of:

providing a preform having a center bearing section connected between a pair of side sections each having a pin hole extending therethrough;

providing a mold having a mold cavity corresponding to the shape of the crankshaft supporter;

providing a plurality of core pins each having a pin insert section which is sized to be insertable into one of said pin holes and an enlarged head section which has a cross section greater than the cross section of the pin hole so that the head section is adapted to abut a peripheral surface of the preform;

inserting at least one core pin into each said pin hole so that the head section of each core pin abuts a peripheral surface of the preform adjacent an open end of the pin hole;

positioning the preform and the core pins inserted therein within the mold cavity so that the head sections of the core pins engage a boundary wall defining the mold cavity so as to stationarily support the preform within the mold cavity in defined spaced relationship from the boundary wall;

supplying molten metal into the mold cavity to surround the preform and define the crankshaft supporter;

removing the molded crankshaft supporter, with the preform embedded therein, from the mold cavity; and then

forming a through hole through the crankshaft supporter generally in alignment with the pin hole.

10. The method as defined in Claim 9, wherein the forming of the through hole in the crankshaft supporter comprises cutting a hole of cross section which is greater than the cross section of the pin hole so as to effect removal of the core pin during forming of the through hole.

11. The method as defined in Claim 9, wherein forming of the through hole comprises cutting of a hole having a cross section equal to or greater than the cross section of the core pin head section so as to effect removal of the entirety of the core pin during forming of the through hole.

12. A method as defined in Claim 9, including inserting a pair of said core pins into each said pin hole from opposite ends thereof so that the head sections associated with the pair of core pins inserted into each pin hole are positioned for engagement with opposed surfaces defining the boundary wall so as to stationarily and securely position the preform within the mold cavity in defined spaced relationship from the surrounding boundary wall.

13. A method as defined in Claim 9, including providing the pin insertion section of the mold pin with outward protrusions which are sized to engage the wall defining the pin hole to prevent sideward movement of the preform relative to the core pin.

14. A method as defined in Claim 9, including providing the head section of the core pin with a protrusion which engages within a recess formed in an opposed boundary wall to stationarily hold the mold pin and the engaged preform within the mold cavity.